**Attribution List for Pavillion based on Phase II sampling of production pits monitoring wells and fluids from 5 production wells.**

| **Organic** Compounds from Phase II ESI only | **Pit MW** | **Gas production liquid or gas** | **Domestic well** | **MCL**/RSL |
|---|---|---|---|---|
| SVOCs | | | | |
| 1,1 Biphenyl | Y | NA | | |
| 2,4-Dimethylphenol | Y | Y | | |
| 2 methylnaphthalene | Y | Y | Y | |
| 2 methylphenol | Y | Y | | |
| 3 and 4 methylphenol | Y | Y | Y | |
| Bis(2-ethylhexyl)phthalate | Y | NA | Y | |
| Naphthalene | Y | Y | Y | |
| Phenol | Y | Y | Y | |
| VOCs | | | | |
| 1,2,4 Trimethylbenzene | Y | Y | | |
| 1,3,5 Trimethylbenzene | Y | Y | | |
| 1,3 Dimethyladamantane | Y | Y | Y | |
| Adamantane | Y | Y | Y | |
| Benzene | Y | Y | | Y |
| Carbon disulfide | Y | NA | | |
| Cyclohexane | Y | NA | | |
| Isopropylbenzene | Y | Y | | |
| Ethylbenzene | Y | Y | | |
| m,p-xylene | Y | Y | | |
| methane | Y | Y | Y | |
| methylcyclohexane | Y | NA | | |

## Attribution List for Pavillion based on Phase II sampling of production pits monitoring wells and fluids from 5 production wells.

| VOCs | | | | |
|---|---|---|---|---|
| n-propyl benzene | Y | Y | | |
| Ethane | Y | Y | Y | |
| Toluene | Y | Y | | |
| Tertbutylbenzene | Y | Y | | |

NA – Not analyzed

Geochemistry analyte suite – absolutely necessary to determine differences in aquifer zones – this has already been demonstrated at Pavillion. No hydrologist would attempt any study without this information for a study or investigation.

In addition, the following groups of compounds are necessary at sites with oil and gas development, this is especially needed if new monitoring wells are going to be installed.

Below are list the fixed and light gases found in domestic wells under Phase II

Methane , Ethane, Propanes, Butanes, Pentanes, Hexanes, Heptanes, Octanes

Below are listed additional groups of compounds associated with various aspects of O&G production

Low Molecular Weight acids – breakdown products of hydrocarbon compounds

Alcohols (primarily methanol) – widely used in O&G production

Glycols – another widely indicator of O&G production (synthetic compounds)

Surfactants - another widely indicator of O&G production (synthetic compounds)

Specific degredation products such as Tert-butyl-alcohol

All of the above need to be addressed within a DQO process. Especially since most of the the compounds listed have been detected under previous investigations. Limiting the analytic list or using methods with high detection limits will not resolve the questions concerning source attribution.